

only four degrees of freedom have to be fixed by the straight guide.

— In a particular embodiment, the straight guide (27) comprises a single guide shaft (73), and the Lorentz force ( $F_z$ ) is used to fix a rotational degree of freedom of the second part (41) about said shaft (73).

(Fig. 2).

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A scanning device for a disc-shaped information carrier about an axis of rotation having a linear motor that can displace the scanning unit in a radial direction. The linear motor comprises a first part and a second part guided with respect to each other in the radial direction by a straight guide. The first part comprises pairs of magnets having opposite directions of magnetization. The second part includes an electric coil system with winding portions. The linear motor is further provided with a control unit for controlling an electric current in the coil system. The control unit controls electric current in the winding portions if the winding portion is present in a magnetic transition region between the pair of magnets, resulting in a Lorentz force in the winding portion, substantially perpendicularly to the straight guide. The Lorentz force is used to fix the degrees of freedom of the second part with respect to the first part. The straight guide has a single guide shaft and the Lorentz force is used to fix a rotational degree of freedom of the second part about the shaft.